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AN AUTHORISATION SYSTEM, A METHOD FOR GIVING AUTHORISATION AND
A METHOD FOR AUTOMATED AND TARGETED ADVERTISING COUPLED TO AN
ELECTRONIC PAYMENT SYSTEM

5

Field of Invention

The present invention relates in a first aspect to an
authorisation system comprising at least one source unit and
at least one destination unit, for giving authorisation to
10 said source unit to completely perform a specific task
regarding said destination units.

In a second aspect, the present invention relates to a
method for giving authorisation regarding payment from one
party to another.

15 In a third aspect, the present invention relates to a
method for providing an automated and targeted advertisement
system, coupled to an electronic payment method.

Description of the Prior Art

In a GSM based payment system, a consumer can pay for a
20 purchase using his/her GSM phone. The consumers phone bill is
than debited the purchase amount.

Technical realisation of such payment system requires
from the consumer nothing but an ordinary GSM telephone.

25 One of the weakest points of this implementation is the
control of creditability of the consumer. (A consumer who has
e.g. not paid his/her phonebill during the past half year is
an unwanted entity in the payment scheme.) Therefore, GSM
based payment schemes have only been implemented for very
small payment amounts so far, e.g. in soda machines. This to
30 reduce the financial risks.

Advertisements nowadays are either non-targeted or then they
are non-automised. Today advertising can be targeted and
automated to varying degrees depending on the medium.

35 Mass media (TV, radio, print, outdoor) is not very
targeted; delivering advertising messages to, at best, a
collection of like-minded consumers.

Paper coupons can be used to drive purchases, yet are
expensive to administer and tend to lead to "price-shoppers".

Ink. t. Patent- och reg.verket

1999-07-20

Huvudfaxen Kosson

2

The Internet has opened up opportunities for better targeting and automation. For example, the on-line book retailer "amazon.com" uses past individual shopping behavior to provide recommendations based on what other people with similar shopping patterns have purchased. Such recommendations do however not provide individuals with specific offers that are not available to others and do not reach people shopping in the physical world.

Messaging based on SMS to mobile phones to date mainly involves sending and receiving messages between individuals or sending specific and requested information from a central actor to many individuals (e.g. stock quotes, weather, sports results, and traffic information).

Advertising to mobile phones via SMS exists, yet as this lacks prior consumer acceptance it is not considered proper etiquette and has thus not taken off. To date it is similar to unsolicited junk-mail, e-mail spam, and tele-marketing. One obstacle has been that the SMS advertisements lack intrinsic value - such as what a paper coupon for example delivers, implying that people simply do not want them.

In US Patent No. 5,590,197 there is disclosed a cyber wallet in the form of stored and protected account information, which may be "carried" on a tamper resistant portable electronic storage medium such as a smartcard, or stored on the customer's computer (or personal digital assistance, PCMCIA card, or the like) together with the browser/mosaic software, is provided to a customer for the purpose of making electronic payments from the possessor of the wallet to a merchant at a remote site on the Internet. Securing of the information contained in the wallet is provided by a public key file containing public keys to be used for encrypting the payment information into an authorisation ticket which is sent by the wallet to the merchant, and then forwarded to the account servicer for decryption, the decryption key being in the form of a private key held only by the account servicer, and to which the merchant and other parties have no access. The public key file preferably contains a plurality of public

Ink. 1. Patent- och reg. ver.

1999-07-20

3

Huvudfaxen Kasson

keys selectable by an identifier associated with but not a part of the key itself, so that the account servicer can control, by having the merchant send an identifier to the wallet, the selection of uncompromised keys without anyone but the servicer having knowledge of which key is being selected. This solution is rather complicated.

Summary of the Invention

The object with the present invention is to solve the above mentioned problems. This is achieved with an authorisation system comprising at least one source unit and at least one destination unit, for giving authorisation to said source unit to completely perform a specific task regarding said destination units according to Claim 1. The authorisation system can comprise communication means for communication between said source unit and said destination unit, characterized in that said authorisation system also comprises an authorisation unit and communication means for communication between both said authorisation unit and said source unit and said authorisation unit and said destination unit, whereas said authorisation unit comprises a memory means, in which there is stored validity information about said at least one source unit, wherein said authorisation unit checks said validity information before a decision is made whether said source unit gets authorised to perform said specific task.

The above mentioned problems are also solved with a method for giving authorisation regarding payment from a consumer to a retailer according to Claim 18. The method comprises the steps:

- said consumer dials a payment identification for a retailer of interest, wherein an authorisation unit receives said payment identification for said retailer of interest and said consumer's identification;
- a point of sale unit for said retailer of interest sends all payment data to said authorisation unit;
- a data base in said authorisation unit checks validity information regarding said consumer and said retailer of

Ink. t. Patent- och reg.verket

S-1-01-20

Huvudfaxen Kassar

4

interest before a decision is made whether said payment authorisation is given; and

- if said payment authorisation is given, said point of sale unit delivers any kind of purchase proof for said retailer of interest and/or for said consumer and/or any other party.

Problems concerning automating and/or targeting of advertisements are solved with a method for an advertising system which is coupled to an electronic payment system. This method provides an advertiser a targeted and automated means of sending an advertisement message, an advertisement message coupled benefit or an advertisement coupled financial benefit regarding certain items, e.g. products and/or services, to a group of targeted consumers according to Claim 35. The method comprises the steps:

- said advertisement system uses information stored in the memory means of the said electronic payment system or from any other source as base for defining the said targeted consumer - so called "data-mining";
- 20 - the advertisement system then uses an electronic messaging system (e.g. SMS, an internet/mobile internet based system, email, a voice message, a phone call) to send the said advertisement message to the said targeted consumers and alters the information in the said memory means (called advertisement log) of the said electronic payment system in such way that it can be retrieved by the said electronic payment system and/or another party whether a specific consumer was targeted, whether a said benefit is coupled to the said advertisement and/or
- 25 whether a said financial benefit is coupled to the said advertisement;
- the said targeted consumer uses the said electronic payment system for purchasing the said item during which the said electronic payment system checks its said memory means whether the said consumer was targeted regarding
- 30
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Ink. t. Patent- och reg.verket

1999-07-20

Huvudfoxen Kassan

5

the said items and whether a said financial benefit is coupled to the said targeted advertisement message; and if a said financial benefit is coupled to the said advertisement message then the said electronic payment system takes the necessary measures to take into account the said financial benefit and to remove the said advertisement log from the said memory means.

The invention will now be described in more detail with reference to preferred embodiments thereof and also with reference to the accompanying drawings.

Brief Description of the Drawings

Figure 1 is a block diagram of an authorisation system according to the present invention;

Figure 2 is a schematic exemplification of a specific application of an authorisation system according to the present invention;

Figure 3 is a flow chart of a method for giving authorisation regarding payment from a consumer to a retailer according to the present invention; and

Figure 4 is a schematic exemplification of a specific application of a targeted automated advertisement system according to the present invention.

Description of Preferred Embodiments

In figure 1, there is disclosed an authorisation system 10 according to the present invention. The system 10 comprises at least one source unit 12 and at least one destination unit 14₁, ..., 14_n. The system 10 can comprise, but not necessarily, a communication means 16 for communication between said source unit 12 and said destination units 14₁, ..., 14_n. Said system 10 also comprises an authorisation unit 18 and communication means 20 for communication both between said authorisation unit 18 and said source unit 12 and said authorisation unit 18 and said destination units 14₁, ..., 14_n. Said authorisation unit 18 comprises a memory means 22, in which there is stored validity information about said at

Ink. t. Patent- och reg.verket

1999 -07- 2 0

6

Huvudfoxen Kossan

least one source unit 12. Said authorisation unit 18 checks the validity information before a decision is made whether said source unit gets authorised to perform said specific task. Said memory means 22 can e.g. be in form of a data base

5 22. Said system 10 also comprises a clearing means 24 connected to said authorisation unit 18. Said clearing means 24 ensures and/or executes any payment transaction between e.g. a consumer and a retailer with or without the usage of any middleman.

10 It is hereby pointed out that in this application the expression consumer means anyone who is paying and the expression retailer means anyone who is receiving money in a payment scheme.

Any of the said communication means 16, 20 can e.g. be

15 optical or infra red communication links, electronic bus system, or mobile communication means.

Any of the said mobile communication means can e.g. be microwave communication means, radio communication means, or based on the NMT, GSM, or WCDMA standard.

20 Any of the said communication means 16, 20 can also be telephone means, or be based on the Internet standard.

According to one embodiment - from now on referred to as Embodiment one - said source unit 12 is designated to a specific consumer and each destination unit 14₁, ..., 14_n is a

25 point of sale unit (P.O.S). Said system 10 comprises also a to said memory means 22 connected clearing means 24. In Embodiment one said validity information comprises the credibility of each consumer. Said authorisation unit 18 uses the credibility of each consumer and payment data received

30 from a point of sale unit 14₁, ..., 14_n as a base for taking the decision whether payment is approved or not. When said payment is approved, said point of sale unit 14₁, ..., 14_n delivers any kind of purchase proof for said retailer of interest and/or for said consumer. This purchase proof can

35 e.g. be a cash ticket.

According to another embodiment - from now on referred to as Embodiment two - which is based on Embodiment one, said

Ink. t. Patent- och reg.verket

1999 -07- 2 0

Huvudfaxen Kassan

7

system 10 comprises also an advertisement system 26 connected to said memory means 22. In Embodiment two said validity information comprises information about advertisement coupled financial benefits of each consumer. Said authorisation unit 5 18 uses the information about advertisement coupled financial benefits of each consumer and purchase data received from a point of sale unit 14₁, ..., 14_n as a base for taking the decision whether payment is approved or not and whether a financial benefit has to be taken into account by the 10 clearing means 24.

According to another embodiment - from now on referred to as Embodiment three - each said source unit 12 is designated to a specific machine user and each destination unit 14₁, ..., 14_n is a single component in a specific machine. 15 Said validity information comprises the state of each said component and data about each said machine user.

In figure 2 there is disclosed a specific application of an authorisation system according to the present invention.

The patent searches to protect a method of authorisation in communication schemes in which a particular source 20 tries to communicate with a particular entity (destination) that is part of a distributed system. First a short explanation of the above terms.

The communication scheme:

25 This is a particular application where a certain communication between source and destination is wanted and which requires some kind of authorisation.

Some examples of such distributed systems are:

- 30 - Electronic parking meters, paid using the driver's mobile phone
- A machine, in which e.g. every single component in the machine can be controlled in a remote way by one or different machine users.
- 35 - A remote (Internet/telephone/GSM) control system for electronic equipment in a building or more specifically a house (cf. the bluetooth communication standard)
- An electronic payment system

Ink. t. Patent- och reg.verket

1999-07-20

8

Huvudfaxen Kassan

- A targeted publicity system
- Components, connected by an electronic bus system
- Vending machine, paid using the purchaser's mobile phone.

5 The physical information carrier for the communication can be of any kind: telephone, all mobile communication systems (NMT, GSM, WCDAM, radio, microwave communications, infra red communications ...), optical communication links, the Internet, any kind of electronic (computer-) bus system, ...

10 In figure 3 there is disclosed a flow chart of a method for giving authorisation regarding payment from a consumer to a retailer according to the present invention. The method begins at block 40. Thereafter, at block 42, the method continues in that said consumer dials, e.g. using his/her GSM
15 telephone, a payment identification, e.g. a specific GSM number, for a retailer of interest, wherein an authorisation unit receives said payment identification for said retailer of interest and said consumers identification, e.g. by retrieving the consumer's GSM number and the specific GSM payment number
20 from the consumer's telephone call without opening a telephone connection. The method then continues at block 44 in that a point of sale unit for said retailer sends all payment data to said authorisation unit. Thereafter, at block 46, a data base in said authorisation unit checks the validity information
25 regarding said consumer and said retailer of interest before a decision is made whether said payment authorisation is given. Thereafter, at block 48, if said payment authorisation is given, said point of sale unit delivers any kind of purchase proof for said retailer of interest and/or for said consumer.
30 At block 50 the method is completed.

If said payment authorisation is not given, said authorisation unit stops the method.

35 In figure 4 there is disclosed a schematic exemplification of a specific application of a method for automated and targeted advertising in which a consumer 62 takes advantage of a financial benefit which is coupled to an advertisement sent to him by the advertisement system 72. The

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1999-07-20

9

Huvudföreläggelsen
The advertisement system 72 is coupled to a certain electronic payment system 74, e.g. the payment system as described by Embodiment one above.

5 The method begins with step 50. The steps 50 to 60 are consecutive in time.

In step 50 an advertiser 64 asks the advertisement system 72 to send a specific advertisement message to a specific group of consumers and specifies a financial benefit coupled to the advertisement.

10 In step 52 the advertisement system's 72 data base 68, which e.g. uses earlier consumer purchase behaviour stored in the electronic payment system database, is used to define the targeted group of consumers. The advertisement system 72 also logs in its database 68 which consumers are targeted for the
15 advertisement message.

In step 54 the advertisement system's computing unit 66 receives the list of targeted consumers from its data base 68.

20 In step 56 the advertisement system 72 sends the specific advertisement messages to all of the targeted consumers.

In step 58 a targeted consumer 62 purchases a number of items, among which one or more items for which the consumer received an advertisement message. The consumer uses the electronic payment system 74 for the purchase.

25 During step 60, which is part of the clearing of the purchase in the electronic payment system 74, the electronic payment system retrieves the advertisement reduction fare information from the advertisement system 72 and takes the reduction automatically into account.

30 A specific realisation of Embodiment 2 contains a GSM based payment system, the advertisement system provider is the same as the electronic system provider, the database 68 is the same as the memory means 22, and the advertisement messages are in the form of SMS messages.

35 It will be understood that the invention is not restricted to the ~~above described~~ and ~~illustrated~~ exemplifying

Ink. t. Patent- och reg.verket

1989-07-20

Huvudfoxen Kassan

10

embodiments thereof, and that modifications can be made
within the scope of the following Claims.

1999 -07- 2 0

Huvudfaxen Kossan

11

CLAIMS

1. An authorisation system comprising at least one source unit and at least one destination unit, for giving authorisation to said source unit to completely perform a specific task regarding said destination units, which authorisation system can comprise communication means for communication between said source unit and said destination unit, **characterized in** that said authorisation system also comprises an authorisation unit and communication means for communication between both said authorisation unit and said source unit and said authorisation unit and said destination unit, whereas said authorisation unit comprises a memory means, in which there is stored validity information about said at least one source unit, wherein said authorisation unit checks said validity information before a decision is made whether said source unit is authorised to perform said specific task.
2. An authorisation system according to Claim 1, **characterized in** that said memory means in said authorisation unit is in the form of a data base.
3. An authorisation system according to any one of Claims 1-2, **characterized in** that one or more of the said communication means are in the form of optical communication links.
4. An authorisation system according to any one of Claims 1-2, **characterized in** that one or more of the said communication means are in the form of infra red communication links.
5. An authorisation system according to any one of Claims 1-2, **characterized in** that one or more of the said communication means are in the form of an electronic bus system.
6. An authorisation system according to any one of Claims 1-2, **characterized in** that one or more of the said communication means are mobile communication means.

Ink. f. Patent- och reg.verket

1999-07-20

Huvudfaxen Kossan

12

7. An authorisation system according to Claim 6, **characterized in** that one or more of the said mobile communication means are microwave communication means.
8. An authorisation system according to Claim 6-7, **characterized in** that one or more of the said mobile communication means are radio communication means.
9. An authorisation system according to Claim 6-8, **characterized in** that one or more of the said mobile communication means are based on the NMT, GSM, or WCDMA standard.
10. An authorisation system according to any one of Claims 1-2, **characterized in** that one or more of the said communication means are telephone means.
11. An authorisation system according to any one of Claims 1-2, **characterized in** that one or more of the said communication means are based on the Internet standard.
12. An authorisation system according to any one of Claims 1-2, **characterized in** that one or more of the said communication means are based on a packet switching network.
13. An authorisation system according to any one of Claims 3-12, **characterized in** that said communication means are any combination of the alternatives given in Claims 3-12.
14. An authorisation system according to any one of Claims 1-13, **characterized in** that one or more of the said source units is designated to a specific consumer and in that one or more destination unit is a point of sale unit (POS).
15. An authorisation system according to any one of the above Claims 13-14, **characterized in** that said authorisation system also comprises a to the data base/memory means connected clearing means.

Ink. t. Patent- och reg.verket

1999 -07- 2 0

Huvudfoxen Kasson

13

16. An authorisation system according to any one of the above Claims 13-15, **characterized in** that said validity information comprises the creditability of each consumer, wherein said authorisation unit uses the creditability of each consumer and payment data received from a point of sale unit as a base for taking the decision whether payment is approved, or not.

17. An authorisation system according to any one of Claims 1-16, **characterized in** that said system also comprises a to said memory means connected advertisement system, wherein said validity information also comprises information about advertisement coupled financial benefits of each consumer.

18. An authorisation system according to Claim 17, **characterized in** that said clearing means uses information in the said data base/memory means to automatically take into account any financial benefit.

19. An authorisation system according to any one of the above Claims 13-18, **characterized in** that said point of sale unit, when said payment is approved, delivers any kind of purchase proof for the user of the point of sale unit and/or for the consumer.

20. An authorisation system according to any one of Claims 1-19, **characterized in** that each said source-unit is designated to a specific machine user, specific machine or specific machine component and in that each destination unit is a single component in the same specific machine or another machine.

21. An authorisation system according to Claim 20, **characterized in** that said validity information comprises information about the state of one or more said specific machine or specific machine component and/or information about one or more said specific machine users.

22. A method for giving authorisation regarding payment from a consumer to a retailer, which method comprises the steps:

Ink. t. Patent- och reg.verket

1999 -07- 2 0

Huvudfaxen Kossan

14

- said consumer dials a payment identification for a retailer of interest, wherein an authorisation unit receives said payment identification for said retailer of interest and said consumer's identification;
 - 5 - a point of sale unit for said retailer of interest sends all payment data to said authorisation unit;
 - a data base in said authorisation unit checks validity information regarding said consumer and said retailer of interest before a decision is made whether said payment
 - 10 authorisation is given; and
 - if said payment authorisation is given, said point of sale unit delivers any kind of purchase proof for said retailer of interest and/or for said consumer.
23. A method for giving authorisation regarding payment from
- 15 a consumer to a retailer according to Claim 22, **characterized in** that said method also comprises the step;
- if said payment authorisation is not given, said authorisation unit stops the method.
24. A method for giving authorisation regarding payment from
- 20 a consumer to a retailer according to Claim 22, **characterized in** that said method also comprises the step;
- if said payment authorisation is not given, said authorisation unit sends an appropriate error message to said point of sale unit and/or to said consumer.
25. A method for giving authorisation regarding payment from
- a consumer to a retailer of interest according to any one of Claims 22-24, wherein said authorisation unit also comprises a to said data base connected switching means and computing unit, **characterized in** that said method also comprises the
- 30 steps;
- said computing unit orders said switching means to open a connection with said point of sale unit, and
 - said computing unit requests said payment data.

1999-07-20

Huvudfaxen Kassan

15

26. A method for giving authorisation regarding payments from a consumer to a retailer of interest according to any one of Claims 22-25, **characterized in** that said computing unit stores/updates data regarding said consumer and/or said retailer.

27. A method for giving authorisation regarding payment from a consumer to a retailer of interest according to any one of Claims 22-26, **characterized in** that said computing unit sends an authorisation signal to said point of sale unit if authorisation is given.

28. A method for giving authorisation regarding payment from a consumer to a retailer of interest according to any one of Claims 22-27, **characterized in** that said payment identification for said retailer is a GSM phone number.

29. A method for giving authorisation regarding payment from a consumer to a retailer of interest according to any one of Claims 22-28, **characterized in** that said authorisation unit does not open a two way communication channel or telephone connection with said consumer in order to retrieve the said payment identification for said retailer of interest or said consumer's identification.

30. An authorisation system according to any one of the above Claims 18, 20 and 29, characterized in that said memory means or data base in said authorisation unit is in the form of a network of at least one information storage devices.

31. An authorisation system according to Claim 30, **characterized in** that said at least one of the information storage devices is in the form of a data base.

32. An authorisation system according to any of Claims 30-31, **characterized in** that said at least one of the information storage devices is in the form of a card comprising a memory means and data processing unit connected to said memory means.

Ink. t. Patent- och reg.verket

1999 -07- 2 0

16

Huvudfaxen Kassan

33. An authorisation system according to any of the above Claims 30-32, **characterized in** that said source unit or said destination unit or said consumer or said retailer has access to said specific information intended for her/him/it in said data base.

34. A method for automated and targeted advertising between at least one consumer (62) and an advertisement system (72), wherein the advertisement system (72) is coupled to an electronic payment system (74), wherein the method comprises the steps:

- an advertiser (64) asks the advertisement system (72) to send a specific advertisement message to a specific group of consumers (62) and specifies a financial benefit coupled to the advertisement:
- 15 - a data base (68) in the advertisement system (72), defines the targeted group of consumers (62), and the advertisement system (72) also logs in its data base (68) which consumers (62) are targeted for said advertisement message;
- 20 - a computing unit (66) in said advertisement system (72) receives a list of said targeted consumers (62) from its data base (68);
- said advertisement system (72) sends the specific advertisement messages to all the targeted consumers (62);
- 25 - a targeted consumer (62) purchases a number of items for which the consumer received an advertisement message, and uses the electronic payment system (74) for the purchase; and
- 30 - the electronic payment system (74) retrieves the advertisement financial benefit information from the advertisement system (72) and takes the benefit automatically into account.

Ink. t. Patent- och reg.verket

1999 -07- 2 0

Huvudfaxen Kassar

17

ABSTRACT

The present invention relates to an authorisation system (10) comprising at least one source unit (12) and at least one destination unit (14₁, ..., 14_n), for giving authorisation to said source unit (12) to completely perform a specific task regarding said destination units (14₁, ..., 14_n), which authorisation system can comprise communication means (16) between said source unit (12) and said destination unit (14₁, ..., 14_n). The authorisation system (10) also comprises an authorisation unit (18) and communication means (20) for communication between both said authorisation unit (18) and said source unit (12) and said authorisation unit (18) and said destination unit (14₁, ..., 14_n). Said authorisation unit (18) comprises a memory means (22), in which is stored validity information about said at least one source unit (12), wherein said authorisation unit (18) checks said validity information before a decision is made whether said source unit (12) is authorised to perform said specific task.

20 (Figure 1).

Ink. t. Patent- och reg.verket

1999 -07- 2 0

Huvudfaxen Kassan

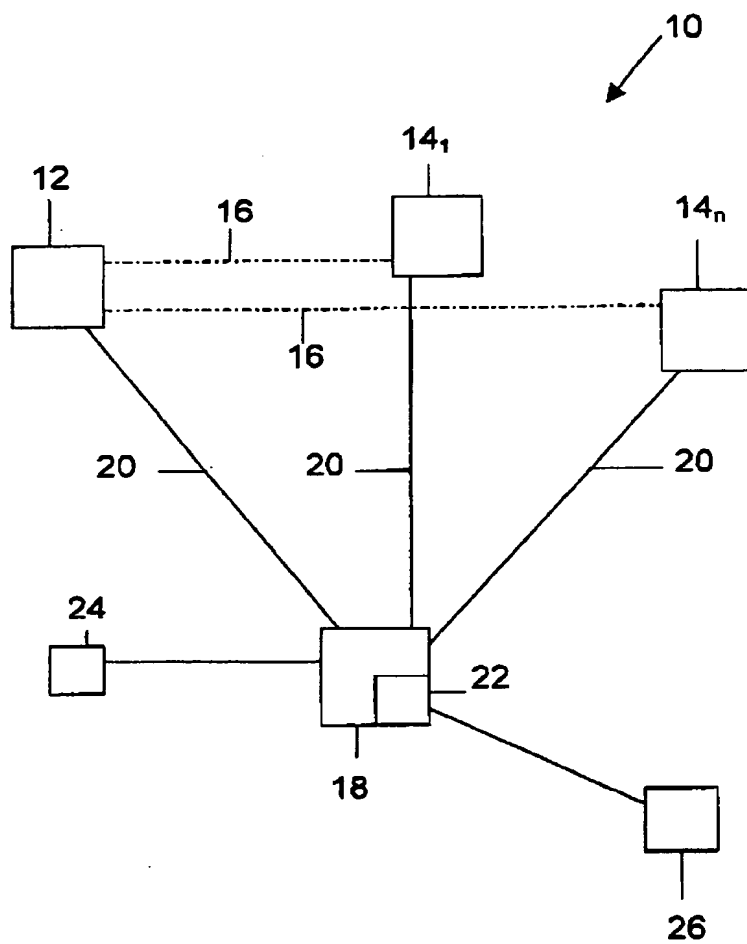


Fig. 1

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1999-07-20

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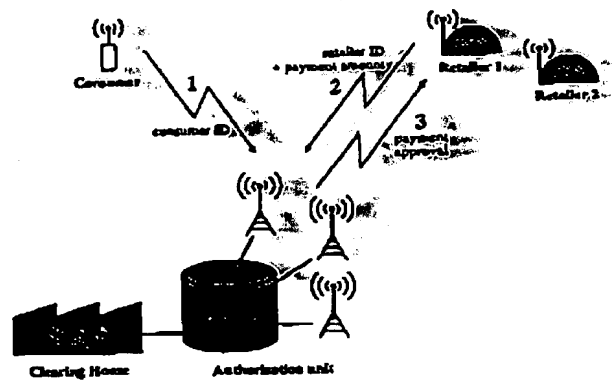


Fig. 2

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1999-07-20

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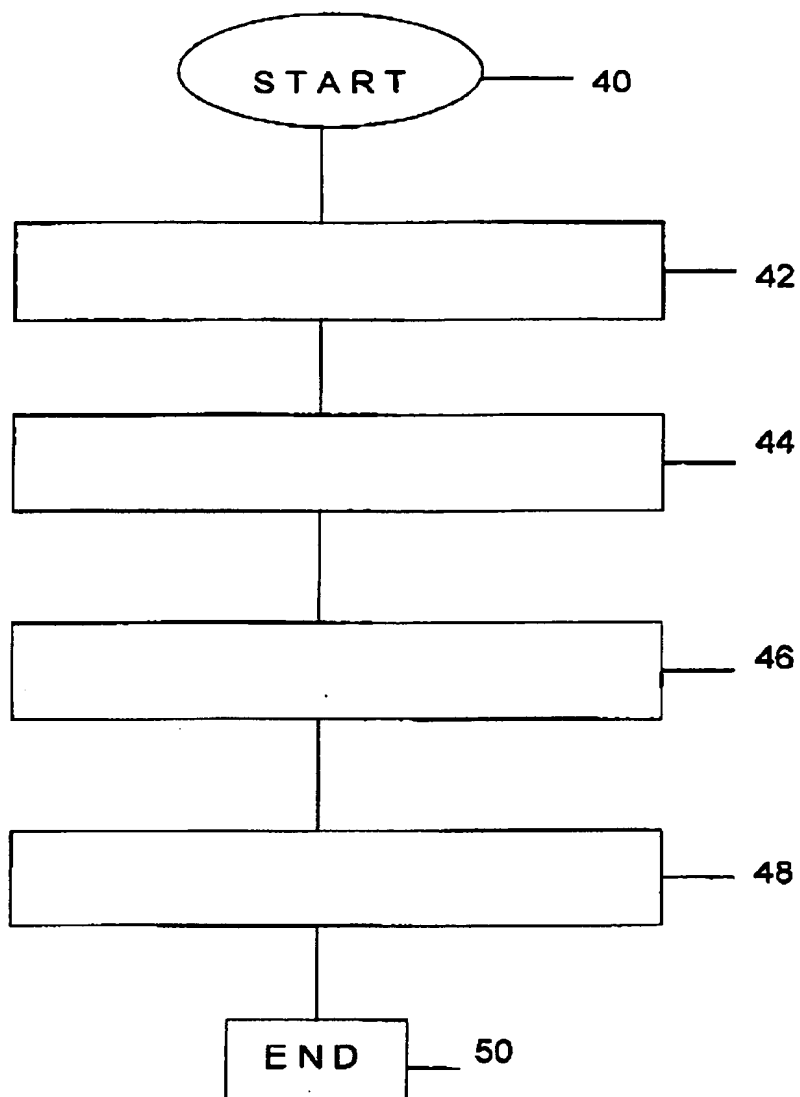


Fig. 3

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1999 -07- 2 0

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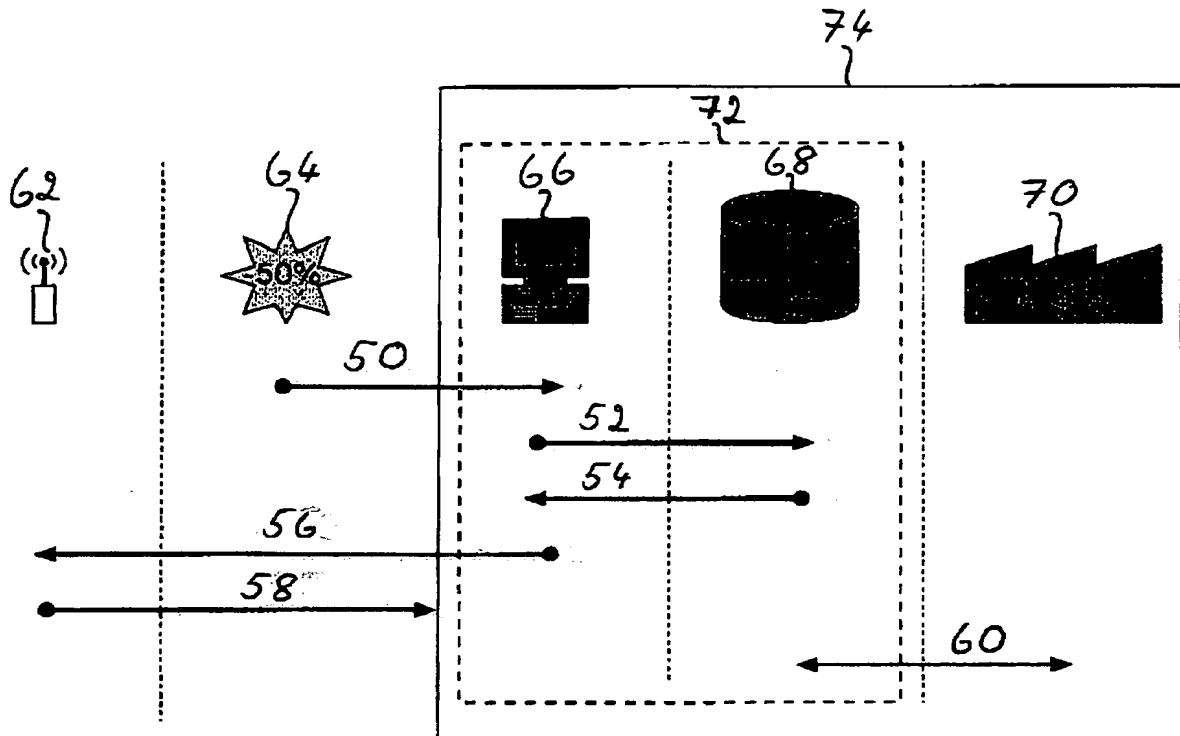


Fig. 4